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IN

THE JAPANESE EMPIRE AND THE COREAN PENINSULA

METALLIC MINERALS

Of the metallic minerals the most important economically is copper; gold comes next, silver third, and iron fourth. Of lead and zinc the production is much smaller; while pyrite, manganese ore, antimony, and tin, are still less important. Bismuth, quicksilver, chromite, tungsten ore, and molybdenite, are also produced in the country, but in very small quantities. Nickel, cobalt, iridium, osmium, platinum, etc. are known to occur, but they have not yet been worked.

The values of the principal metals or metallic minerals produced in 1908, were:

Gold	£ 715,715	Copper	£ 2,357,047	Iron	£ 201,879	Tin	£ 3,593	Manganese Ore	£ 15,423
Silver	462,121	Lead	41,498	Antimony	5,498	Zinc Ore	31,627	Pyrite	17,562

Gold :—The gold production of Japan in 1908 was 135,282 ozs., and the mines which yielded above 500 ozs. of gold in the same year were 39 in number. Most of the gold was obtained from the quartzose gold and silver ores, in some of which it was accompanied with copper, and sometimes with lead ores. The amount, derived from the *Kuromono* or black ore, a mixture of zinc blende, galena and barite, with chalcopryite and iron pyrites, containing gold and silver, as in the Kosaka and Kanō mines, was about 15,000 ozs. and that from copper ores, as in the Hitachi mine, and that from lead ores, as in the Kamioka mine, was much less, probably not exceeding 3,000 ozs. The amount of placer gold, won in 1908, was 8,406 ozs., and was chiefly dredged in Hokkaidō. The quartzose gold and silver ores are found mostly in the provinces of Satsuma, Bungo and Chikugo in Kyūshū; in Rikuzen and Rikuchū in Northeast Japan; and in the provinces of Shiribeshi and Iburi in Hokkaidō. They are also found scattered in the inner zone of Japan, as in the Handa, Sado, Kuratani, Togi, Kanahira, Ikuno, Ōmori, and other mines, and also in Izu and northern Taiwan. Most of the deposits occur as veins in the Tertiary, liparite, and andesite, but a few follow the plane of stratification of the Mesozoic, and are considered bedded veins, as in the Shishiori mine. Impregnations are often found together with the veins. The deposits of the Washinosu and Otani mines often contain a workable amount of copper ore. The Ikuno and Ōmori mines yield moderate amounts of copper. The Innai, Handa, Ikuno, Ōmori, and other mines were long known as silver mines. Metasomatic deposits are also known to occur.

The principal mines are as follows:

Horobetsu, Prov. of Iburi	Sado, Prov. of Sado	Ushio, Prov. of Satsuma
Shiribeshi, Prov. of Shiribeshi	Omatsuyama, Prov. of Izu	Oxuchi, "
Innai, Prov. of Ugo	Togi, Prov. of Noto	Yamagano, "
Kosaka, Prov. of Rikuchū	Kuratani, Prov. of Kaga	Fuke, "
Washinosu, "	Kanahira, "	Serigano, "
Kawaishi, "	Ikuno, Prov. of Tajima	Otani, "
Shishiori, Prov. of Rikuzen	Ōmori, Prov. of Iwami	Nitabira, "
Kanō, Prov. of Iwashiro	Yano, Prov. of Chikugo	Kinkwaseki, Taiwan
Handa, "	Taiono, Prov. of Bungo	Botanaka, "
Hitachi, Prov. of Hitachi	Urushi, Prov. of Satsuma	Zuihō, "

Of the production of gold in Corea we have no statistical data, but it is estimated to reach 80,000 ozs. annually. About half of this is obtained from placer gold, the fields being scattered over the whole peninsula except the province of Kyōng-geui-dō. It is found in eluvial and fluvial deposits, the greater part being derived from the latter. Most of the gold ores are found in granite and gneiss, but some in the Palæozoic and the Mesozoic as well as in eruptive rocks. They form quartz veins, sometimes accompanied with abundant sulphide minerals. The deposits of the Ap-eun-san and Syu-an mines occur in the Palæozoic limestone, the latter near its contact with the granite. They are known as metasomatic deposits. The Un-san mine is the largest, its output being estimated at above 40,000 ozs. Other notable gold mines are the Cha-mo-san in Phyoŋ-an-dō, the Chik-san in Chhyung-chhyōng-dō, and the Keuu-gu mining district in Chōl-la-dō.

Silver :—The silver produced in 1908 amounted to 4,380,822 ozs. and the mines, which yielded above 15,000 ozs. in the same year, were 25 in number. Almost two-thirds of the output in 1908 was extracted from the *Kuromono*. Other chief sources of silver are the copper ores and the quartzose gold and silver ores. The silver derived from lead ores is much less in amount.

The principal mines are as follows:

Shiribeshi, Prov. of Shiribeshi	Sado, Prov. of Sado	Ikuno, Prov. of Tajima
Tsubaki, Prov. of Ugo	Hitachi, Prov. of Hitachi	Yoshioka, Prov. of Bitchū
Ani, "	Ashio, Prov. of Shimotsuke	Ōmori, Prov. of Iwami
Hisaichi, "	Kamioka, Prov. of Hida	Kuki, "
Innai, "	Hiragane, "	Yamagano, Prov. of Satsuma
Kosaka, Prov. of Rikuchū	Takane, "	Benzaiken, "
Osaruzawa, "	Hatasa, Prov. of Mino	Kinkwaseki, Taiwan
Kanō, Prov. of Iwashiro	Kuratani, Prov. of Kaga	
Handa, "	Omodani, Prov. of Echizen	

Lead :—The lead production in 1908 was 6,416,097 lbs. Of which the Kamioka mine contributed nearly three-fourths. The deposits of the Kamioka mine occur in gneiss, sometimes near its contact with quartz-porphry, the ore consisting chiefly of galena, chalcopryite, and zinc blende, and the vein-stuff consisting of pyroxene and epidote. The lead extracted from *Kuromono* in the Kosaka mine is much less, but ranks second in quantity. In the Kuratani mine, the veins consist of galena, the vein-stuff being rhodochrosite, and occur in Tertiary tuff near liparite; while the veins of the Kuki mine lie in quartz-porphry and consist of galena, the vein-stuff being calcite and quartz.

The principal mines are as follows:

Kosaka, Prov. of Rikuchū	Kamioka, Prov. of Hida	Kuratani, Prov. of Kaga	Kuki, Prov. of Iwami
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Copper :—The copper production in 1908 was 91,982,602 lbs. and the mines, which yielded above 150,000 lbs. in the same year, were 43 in number. The chief sources of copper are acid ores, basic ores, and *Kuromono*. The copper ores are the most widely distributed of the metallic minerals. They occur in rocks from the Crystalline Schist System up to the Tertiary, and are also found in the igneous rocks. The basic ores, consisting of intimate mixtures of chalcopryite and iron pyrites, are mostly confined to the outer zone, especially to that of South Japan. They occur in the Crystalline Schist and in the Palæozoic and follow generally the plane of stratification; they have long been known as bedded deposits. Their chief sources are in the Crystalline Schist especially in Shikoku, the Beeshi mine being their representative. The Kune mine is isolated in central Japan and its ores are chiefly transported for smelting to the Innai, Hitachi and other mines. The Hitachi mine is the only deposit found in the Schist in North Japan. The Palæozoic is much less productive, though the famous Iwaya, Hibira and Makimine mines lie in it. Basic ores are also found in the Mesozoic, especially in Yamato, Kii and Tosa, but are not important. The acid ores are widely distributed in the inner zone, especially in Northeast Japan and Chūgoku, and their mode of occurrence seems to differ in different places. In Northeast Japan and also in Echizen and Kaga, they occur mostly as veins in the Tertiary, liparite, propylite, and andesite, or near their contact, the deposits in the Osaruzawa, Ani, Hisatchi, Arakawa, Nagamatsu, Ogoya and Yūsenji mines being well known; while the deposits of the Omodani mine are found in the Mesozoic and quartz-porphry, and those of the Mizusawa mine in the granite near its contact with the liparite. The vein-stuff is almost always quartz, accompanied with calcite and barite, except in a few cases, such as the clay veins of the Furokura mine. The ores are chalcopryite, iron pyrites and zinc blende being almost always present, often with borate and galena. The copper veins of the famous Ashio mine are chiefly found in the liparite. In central Japan, as in Hida, the copper deposits are found in the Palæozoic and generally follow the plane of stratification, being considered to be bedded veins, as in the Hiragane and Takane mines. The ores are chalcopryite with pyrite and zinc blende. In Chūgoku, excepting the deposits of the Ikuno and Ōmori mines, they are mostly found as veins in the Palæozoic as well as in the Tertiary, accompanied with igneous rocks, some being considered to be contact deposits, as in the Sasagatani mine. The most important deposits occur in the Palæozoic with igneous rocks; i.e., near the contact with granite, as in the Obiye mine; with quartz porphyry and porphyrite, as in the Yoshioka mine; and with liparite, as in the Sasagatani mine. The vein-stuff is quartz, often accompanied with contact minerals. The ores are chalcopryite, accompanied with pyrrhotite and pyrite. *Kuromono* is practically confined to the inner zone of North Japan, as is the Kosaka, Tsubaki and Kanō mines, and occurs in the Tertiary accompanied with liparite, dacite, propylite, and andesite. The deposit seems to belong to the replacement variety.

The principal mines are as follows:

Ani, Prov. of Ugo	Furokura, Prov. of Rikuchū	Kusakura, Prov. of Echigo
Hisaichi, "	Tokitō, "	Ashio, Prov. of Shimotsuke
Arakawa, "	Mizusawa, "	Kobyaku, "
Tsubaki, "	Nagamatsu, Prov. of Uzen	Hitachi, Prov. of Hitachi
Innai, "	Ōtori, "	Takara, Prov. of Kai
Kosaka, Prov. of Rikuchū	Kanō, Prov. of Iwashiro	Kune, Prov. of Tōtōmi
Osaruzawa, "	Yakuki, Prov. of Iwaki	Hiragane, Prov. of Hida

Takane, Prov. of Hida
Ogoya, Prov. of Kaga
Yūsenji, "
Omodani, Prov. of Echizen
Ikuno, Prov. of Tajima
Kokusei, Prov. of Mimasaka
Yoshioka, Prov. of Bitchū

Obiye, Prov. of Bitchū
Hōmanzan, Prov. of Izumo
Omori, Prov. of Iwami
Sasagatani, "
Naganobori, Prov. of Nagato
Hiraiwa, Prov. of Iyo
Kanayama, "

Besshi, Prov. of Iyo
Chibara, "
Mochibe, Prov. of Awa
Seki, Prov. of Bungo
Hibira, Prov. of Hyūga
Makimine, "
Kinkwaseki, Taiwan

In Corea only the Kap-san mine is now being worked. The production is estimated to be 52,911 lbs. The deposits occur in the Palæozoic limestone and form irregular masses of sulphides, replacing the limestone along its stratification.

Iron :—The iron production in 1908 was 45,759 metric tons, the greater part being supplied by the Kamaishi mine in Rikuchū. The amount extracted from the iron sand in the Chūgoku mountains comes next. With the exception of iron sand in Chūgoku, the important sources are practically confined to the contact deposits. The magnetite deposits of the Kamaishi and Hitokabe mines in Rikuchū occur in the Palæozoic limestone or clayslate along or near the zone of contact with diorite and granite, and the micaceous iron deposits of the Sennin mine in Rikuchū in metamorphosed schists and limestone in the contact with granite. The iron sands of Chūgoku have been derived from the disintegration of granite, diorite, and granite-porphry. Besides the deposits above mentioned, bog-iron ore at Abuta in Iburi, limonite at Yanahara in Mimasaka, and magnetite and limonite in Nagato and Buzen, are mined, the total amount in 1908 being only 34,676 tons.

In Corea, Kai-chhyōn in Phyang-an-dō was until lately the only iron locality. The ore is limonite, which forms beds in the Palæozoic. Recently iron ore has been mined, in Hoang-hai-dō, the production in 1908 being about 100,000 metric tons. Most of the iron ore is limonite and occurs as blocks of various sizes in clay, being derived from the disintegration of beds and veins in the Palæozoic as well as in the Mesozoic, and deposited *in situ*; only the deposit of the An-ak mine occurs in the Mesozoic and consists of hematite.

Antimony :—The output of antimony in 1908 was 436,953 lbs., of which the Ichinokawa mine in Iyo yielded 309,563 lbs. or nearly two thirds of the whole. The deposits in the Ichinokawa mine consist of stibnite mixed with more or less quartz. They occur as veins in the Crystalline Schist and in the Cretaceous. The Kano mine in Suō has a much smaller output, the deposits occurring as veins in the Palæozoic. Other antimony mines are less important but mostly occur in the Crystalline Schist and in the Palæozoic from Kii to Higo through Shikoku.

Tin :—The production of tin in 1908 was 56,727 lbs., of which about three-fourths was derived from the Suzuyama mine in Satsuma, and about one-fifth from stream tin. The deposits of the Suzuyama mine occur in the Mesozoic sandstone as veins, and consist of fine grained cassiterite. Stream tin has been chiefly obtained at Suzuyama, and at Takayama in Mino. In the latter locality it has been derived from veins in the granite.

Manganese ore :—The production of manganese ore in 1908 was 11,130 metric tons. The productive sources of manganese ore are almost wholly confined to the Palæozoic and the Tertiary. Generally the ores in Hokkaidō and in Mutsu occur in the Tertiary, and those in South Japan, as in Tamba and the narrow district ranging from Shima and Ise to Kyūshū across Shikoku, lie in the Palæozoic in the bedded form. In the former case the ores are often accompanied with tuff or tuffaceous clay, while in the latter hornstone often forms the country rocks.

The principal mines are as follows:

Pirika, Prov. of Shiribeshi Chibashiri, Prov. of Shiribeshi Iwasaki, Prov. of Mutsu Minamimata, Prov. of Mutsu.

Zinc ore :—The production of zinc ore in 1908 was 18,299 metric tons. It is widely distributed in the silver, lead, and copper mines. Only in recent years have the ores been dressed and exported, but the output is still limited in quantity. The principal mines are the Karatoya in Uzen, the Kamioka in Hida, and the Sasu in Tsushima. The Karatoya and Sasu mines were long worked as silver mines, while the Kamioka is a lead and silver mine. The deposits of the Karatoya mine occur in the Tertiary near liparite and consist of *Kuromono* ore, while those of the Sasu mine lie in the Mesozoic near the contact with quartz-porphry in vein-form, and consist of zinc blende with a rather small quantity of vein-stuff.

Iron pyrites :—The production of iron pyrites in 1908 was 33,867 metric tons. The ores are sent first to the manufactories of sulphuric acid or fertilizers, and then to the copper smelters, as they always contain copper. They are chiefly mined in Chūgoku and outer zone of South Japan, their mode of occurrence being the same as that of copper ores, as they are in fact copper ores of a very low grade.

The principal mines are as follows:

Yanahara, Prov. of Mimasaka
Shimoyanahara, "

Hisaki, Prov. of Mimasaka
Motoyama, Prov. of Bitchū

Iimori, Prov. of Kii

NON-METALLIC MINERALS.

Of the mineral products of Japan coal is the most important. Petroleum ranks third in value. Of the non-metallic minerals sulphur comes third. Asphalt and graphite are less important. Other non-metallic minerals, such as phosphate; peat; amber; stone for building, ornaments, and monuments; clays; precious stones; slates, abrasive materials; asbestos; gypsum; limestone; fluorspar; talc; mica; quartz, etc. are known to occur. The values of the three above mentioned non-metallic minerals produced in 1908, were:

Coal.....£ 6,572,466

Petroleum.....£ 674,586

Sulphur.....£ 81,194

Graphite :—The production of graphite is very variable, and was 395,261 lbs. in 1908. It occurs in the gneiss, as in Hida, Etchū, and North Kyōng-syang-dō, or in the Palæozoic and Mesozoic near the contact with granite or quartz-porphry, and also in igneous rocks, as in Rikuchū, Kaga and Satsuma.

The principal mines are as follows:

Sansō, Prov. of Rikuzen Naoi, Prov. of Hida

Chinodani, Prov. of Etchū Yoneyama, Prov. of Satsuma

Coal :—The output of coal in 1908 was 14,979,687 metric tons. It is known to occur in the Mesozoic and the Tertiary, anthracite belonging in the former and brown coal in the latter. The anthracites in the Jurassic of Nagato, as in the Ōmine coal field, and in the Cretaceous of Amakusa in Higo, are well known; while those in the Triassic of Bitchū and in the Cretaceous of Awa are less important. Of far greater importance, are the coal-seams in the Tertiary, of which the coal fields of Kyūshū and Hokkaidō are the most extensive and valuable. The coal fields, extending over Iwaki and Hitachi, rank next but the coal is much inferior in quality. The coal fields in southern Nagato and in northern Taiwan, are of much less extent and the coal is inferior in quality. In south Karafuto or Saghalien the coal-bearing Tertiary is of wide extent, and recently some collieries have been opened.

The principal collieries are as follows:

Yūbari, Prov. of Ishikari

Shin-nyū, Prov. of Chikuzen

Mitsui-tagawa, Prov. of Buzen

Shin-yūbari, "

Shakanoo, "

Kanada, "

Sorachi, "

Meiji, "

Hōkoku, "

Horonai, "

Mitsui-hondō, "

Ōtō, "

Onoda, Prov. of Iwaki

Gotoku-kaigun, "

Akaike, "

Iriyama, "

Futase, "

Miyazaki-hōshū, "

Uchigō, "

Namazuda, "

Miike, Prov. of Chikugo

Yoshima, "

Yoshio, "

Yoshinotani, Prov. of Hizen.

Miyoshi, Prov. of Chikuzen.

Mameda, "

Ōchi, "

Onoura, "

Mitsui-yamano, "

Akasakaguchi, "

Otsuji, "

Shimoyawada, "

Takashima, "

Kijanose, "

Tadakuma, "

In Corea the anthracite near Phyang-yang in Phyang-an-dō is important. The output is expected to amount to over 100,000 tons per annum. The Tertiary coal on the eastern coast is less important. In southern Manchuria anthracites are found in the Jurassic in Sai-ma-chi. The anthracites in the Coal Measure have been worked, the Yen-tai coal field being important. The most valuable and important coal-seams lie in the Tertiary, and are known by the name of the Fu-shun coal field, the output in 1908 being 465,740 tons.

Petroleum :—The petroleum production in 1908 was 2,064,510 bbls (bbls. of 42 gals.), the Echigo oil fields yielding about 99 per cent of the whole. The petroleum occurs in Tertiary, the oil-bearing strata being sandstone or tuff-sandstone.

The principal oil fields are as follows:

Nitsu, Prov. of Echigo

Amaze, Prov. of Echigo

Kubiki, Prov. of Echigo

Higashiyama, "

Ushirodani, "

Sigara, Prov. of Tōtōmi

Nishiyama, "

Ojiya, "

Sulphur :—Deposits of sulphur are found very widely distributed in the volcanic regions of Japan and mostly inside craters. The sulphur occurs mixed with ejected materials. Beds of sulphur flow mixed with mud are found. Sulphur is also derived from the sulphureted vapour of solfataras, as in Kujūsan.

The principal mines are as follows:

Kobui, Prov. of Oshima

Iwaonupuri, Prov. of Iburi

Iwōjima, Prov. of Ōsumi

Kumadomari, "

Uguisuzawa, Prov. of Rikuchū

Hokutō, Taiwan

Oshino, "

Numajiri, Prov. of Iwashiro

Shikabe, "

Kujūsan, Prov. of Bungo

June, 1910.

金屬礦物

銅	二、三、〇一一、八四九	金	六、九八七、五二四
銀	四、五一、六八五	鐵	一、九七〇、九四〇
鉛	四〇五、一二三	亞鉛礦	三〇八、七七五
硫化鐵礦	一七一、四五九	滿俺礦	一五〇、五七〇
安質母尼	五三、五七八	錫	三五、〇七六
格魯謨鐵礦	一三、七二四	砒鉛	七、九八一
水銀	一、七四二	水鉛礦	一、一九六
タングステン礦	四九〇		

一 金 明治十一年中ニ於ケル金ノ產出額ハ千四百貫七一二ニシテ同年中其五貫以上ヲ產出シタル鑛山二十九アリ、金ハ主トシテ金銀ヲ含有スル石英、鑛石ヨリ採取セラレ銅鑛時ニハ鉛鑛ニ隨件ス、而シテ小坂、加納鑛山等ノ所謂黑物ヨリ抽出セラレタル金ハ百五十貫ニ充タサルヘク、日立鑛山等ノ銅鑛、神岡鑛山等ノ銀鑛ヨリ抽出セラレタルハ百五十貫ニ少額ニシテ三十貫ヲ出テサルヘシ、砂金ハ六十餘貫ニシテ主ニ北海道ニ於テ採取セラレタリ

金銀ヲ含有スル石英ノ鑛石ハ主トシテ薩摩、豐後、筑後、陸前、陸中、後志、膽振ニ産シ、此他半田、佐渡、倉谷、金平、富來、生野、大森鑛山等日本ノ内帶及伊豆並ニ臺灣ノ北部ニ散在シテ產出ス、鑛床ハ主ニ第三紀層ノ石英粗面岩及安山岩ニ鑛脈ヲ成シテ胚胎シ、時ニ中生層ノ層理面ニ胚胎シテ鹿折鑛山ノ鑛床ノ如ク層狀鑛脈ト思惟セラレ、モノアリ、又鷲ノ巢、大谷等ノ鑛山ノ如ク銅鑛ノ稼行ニ堪フヘキノヲ含有セラルコトアリ、生野及大森鑛山ハ多量ノ銅ヲ產出シ、院內、半田、生野、大森等ノ諸鑛山ハ永ク銀山トシテ知ラレタルモノニシテ其鑛石ニハ硫安銀鑛及輝銀鑛ヲ隨件ス、此他交代鑛床ニ屬スル鑛床アレトモ重要ナラス

主要ナル金鑛山ハ左ノ如シ

鶴別	(聯振國)	鹿折	(陸前國)	倉合	(加賀國)
後志	(後志國)	加納	(岩代國)	金平	(同)
院內	(羽後國)	半田	(同)	生野	(但馬國)
小坂	(陸中國)	日立	(常陸國)	大森	(石見國)
鷺ノ集	(同)	佐渡	(佐渡國)	矢野	(筑後國)
金石	(同)	富來	(能登國)	鯛生野	(豐後國)

漆尾	(同)	布計	(同)	金瓜石	(臺灣)
大口	(同)	芹ヶ野	(同)	牡丹坑	(同)
山ヶ野	(同)	大谷	(同)	瑞芳	(同)
		仁田平	(同)		

朝鮮ニ於ケル銀ノ產出額ハ明治四十一年中ニハ七百貫内外ニシテ其
一半ハ砂金山ヨリ採取セラレタリ、砂金山ハ京畿道以外ノ各道ニ散在シ、原地沈積ニ
係ルモノトナヘル、洪沼地及舊河床即チ河成増堤ノ砂礫道ニ賦存スルモノトアリ、就中
後者ヲ主要ナルモ、トス、金礦ハ多ク花崗岩若クハ片麻岩ニ胚胎スルモノ亦古生層、中
生層、火成岩中ニ存スルコトアリ、鑛床ハ石英脈ヲナシ、時ニ多量ノ硫化鑛物ヲ含
有ス然ルニ殷山及遂安鑛山ノ鑛床ハ古生代石灰岩中ニ胚胎シ、遂安ノ鑛床ハ花崗岩
トノ接觸部ニ近ク存在ス、而シテ兩者共ニ交代鑛床ニ屬ス、雲山鑛山ハ金山中最モ
大ナルモノニシテ其產額年二三三百貫ニ上リ片麻岩若クハ花崗岩中ノ石英脈ヲ稼行ス
其他著シキ金山ニハ平安道ノ慈母山、忠清道ノ稷山、全羅道ノ金溝金山アリ

二銀 明治四十一年中ニ於ケル銀ノ產出額ハ三萬三千百十八貫五四六ニシテ同年
中百貫以上ヲ產出セル鑛山二十七アリ、而シテ同年中ノ產出額中約三分ノ二ハ黒物
ヨリ抽出セラレタルモノニシテ其他ハ主ニ銅鑛及金銀ヲ含有スル石英ノ鑛石ヨリ採
取セラレ、鉛鑛ヨリ製出セラレタルモノハ其量多カラス

主要ナル銀山ヲ擧クレハ左ノ加シ

後志	（後志國）	佐渡	（佐渡國）
樺	（羽後國）	日立	（茨陸國）
阿仁	（同）	足尾	（下野國）
三市	（同）	神岡	（飛驒國）
院內	（同）	平金	（同）
小坂	（同）	高根	（同）
尾去澤	（陸中國）	畑佐	（美濃國）
加納	（岩代國）	倉谷	（加賀國）
牛田	（同）	面谷	（越前國）

生野	（但馬國）
吉岡	（備中國）
大森	（石見國）
久喜	（同）
山ヶ野	（薩摩國）
辨財天	（同）
金瓜石	（臺灣）

三鉛 明治四十一年中ニ於ケル鉛ノ產出額ハ四百八十五萬五百一十ニシテ、内四
分ノ三ハ飛騨ノ神岡鑛山ノ產出ニ係レリ、同山ノ鑛脈ハ片麻岩、時ニ石英斑岩ニ接
スル片麻岩ニ胚胎シ、鑛石ハ主ニ方鉛鑛、黃鐵鑛及閃亜鉛鑛、鑛石ハ輝石、綠簾石等
ヨリ成ル、陸中ノ小坂鑛山ニ於テ黒物ヨリ製出セラルタル鉛ハ第二位ニアリ、加賀
ノ倉谷鑛山ニ於ケル鑛脈ハ石英粗面岩ニ貫通セラルタル第三紀凝灰岩中ニ胚胎シ、
主ニ方鉛鑛ヨリ成リ、鑛石ハ菱錳偽硫ナリ、石見ノ久喜鑛山ニ於ケル鑛脈ハ石英斑
岩ニ胚胎シ、方鉛鑛ヲ主トシ鑛石ハ方解石及石英ヨリ成ル、以上四鑛山ハ其主要ナ
ルモノナリトス

四銅 明治四十一年中ニ於ケル銅ノ產出額ハ六千九百五十三萬七千八百六十五斤ニシテ同年中其十五萬斤以上ヲ產出セシ鑛山三十六アリ銅ハ主ニ酸性鑛石、鹽基性鑛石及黒物ヨリ製出セラル、銅鑛ハ金屬鑛物中最モ廣ク分布セルモノニシテ、結晶片岩素ヨリ第三系ニ至ル各岩層及火成岩中ニ胚胎ス、鹽基性鑛石ハ主ニ黃銅鑛、黃

鐵鑛ノ密雜セルモノリ成リ殆ント全ノ日本ノ外帶、殊ニ南日本ノ外帶ニ限ラレタ
賦存ス、結晶片岩及古生層中ニ存スル鑛床ハ普通層面ニ胚胎シテ鑛層トシテ思惟セ
ラル、其主ナルモノヲ久根晶片岩、殊ニ四國ノ結晶片岩中ニアルモノトシ、別子銅山
ハ其最大ナルモノナリ、又根銅山ハ中央日本ニアリテ鑛石ハ主ニ院內、日立鑛山等
ニ於テ製鍊セラル、日立鑛山ノ鑛床ハ北日本ニ於テ結晶片岩中ニ胚胎セル唯一ノモ
ノナリ、古生層中ノモノハ結晶片岩中ノモノニ比シ主要ナラセトモ尚岩屋、日平、
檜峰等著名ナル鑛山ノ之ニ屬スルアリ、又鹽基性鑛石ハ中生層、殊ニ大和、紀伊及土
佐ノ中生層ニ發見セラル、モ重要ナラズ、酸性鑛石ハ日本ノ内帶殊ニ東北地方及中
國ニ廣ク分布シ、其賦存ノ狀態ハ各地方ニヨリ差異アリ、即チ東北地方並ニ越前、加
賀等ニ於テハ鑛床ハ大部分鑛脈ニシテ第三紀層ノ石英粗面岩、粒狀安山岩及安山岩中
ニ胚胎シ此等ノ接觸部ニ近ク存在ス、尾去澤、阿仁、日三市、荒川、永松、尾小屋、遊泉
寺等諸鑛山ノ鑛床ハ其著シキモノナリ、獨リ面谷鑛山ノ鑛床ハ中生層及石英斑岩中
ニ、水澤鑛山ノ鑛床ハ石英粗面岩ニ接觸セル花崗岩中ニ胚胎ス、鑄石ハ常ニ石英ナ
ルモ唯不老倉鑛山ノ粘土脈ノ如ク石英ノ鑄石ヲ有セサルモノアリ、鑛石ハ黃銅鑛ニ
シテ常ニ黃鐵鑛、閃亞鉛鑛ヲ伴フ、足尾銅山ノ鑛脈ハ主トシテ石英粗面岩中ニアリ、
中央日本ニ於テハ鑛床ハ古生層中ニ在リテ普通層面ニ胚胎シテ金、高根等ノ鑛床ノ
如キハ層狀鑛脈ト思惟セラル、鑛石ハ黃銅鑛ニシテ黃鐵鑛及閃亞鉛鑛ヲ隨伴ス、中
國ニ於テハ鑛床ハ生野、大森鑛山等ヲ除ケハ、火成岩ヲ伴ヘル古生層並ニ第三紀層
中ニ鑛脈トシテ胚胎シ、笹ヶ谷鑛山ノ鑛床ノ如キハ接觸鑛床ニ屬ス、主要ナル鑛床
ハ火成岩ト接觸セル古生層中ニアリ、即チ帶江鑛山ニ於ケル如ク花崗岩ト、吉岡鑛
山ニ於ケル如ク石英斑岩及玢岩ト、鉦ヶ谷鑛山ニ於ケル如ク石英粗面岩ト古生層ト
ノ接觸部ニ近ク古生層中ニ胚胎ス、鑄石ハ石英ニシテ屢接觸物ヲ隨伴シ、鑛石ハ
黃銅鑛ニシテ磁硫鐵鑛、黃鐵鑛ヲ伴フ、黒石ハ石英ニシテ壓鑛、方鉛鑛及重晶石ノ密
雜セルモノニシテ黃銅鑛及黃鐵鑛ヲ混シ金銀ヲ含有ス、其分布ハ鉛鑛ト小板、椿、加
納鑛山等東北地方ノ内帶ニ限ラ、鑛床ハ不規則ナル大塊ヲナシテ第三紀層ニ胚胎
シ石英粗面岩、石英安山岩、粒狀安山岩及安山岩ニ關係ヲ有ス、其成因ニ關シテハ交
代鑛床ニ屬スヘシト云フ、黒石ヨリハ金、銀、銅、鉛ヲ製鍊ス

主要ナル銅山ハ左ノ如シ

八瑛	加納	大島	永松	水澤	山縣 錫	不老倉	尾去澤	小坂	院內	椿	荒川	日三市	阿仁
(磐城國)	(岩代國)	(同)	(羽前國)	(同)	(同)	(同)	(陸中國)	(同)	(同)	(同)	(同)	(羽後國)	(同)
—————													
帶江	國盛	生野	面谷	遊泉寺	尾小屋	高根	平金	實根	寶	日立	足尾	草倉	吉岡
(備中國)	(美作國)	(但馬國)	(越前國)	(同)	(加賀國)	(飛騨國)	(遠江國)	(甲斐國)	(常陸國)	(下野國)	(同)	(越後國)	(備中國)
—————													
金石石	槇峰	日平	關	持部	千原	別子	金山	平登	長登	笹ヶ谷	寶滿山	資瀧山	石見國
(同)	(同)	(日向國)	(豐後國)	(阿波國)	(同)	(伊豫國)	(長門國)	(同)	(同)	(同)	(出雲國)	(石見國)	(備中國)
—————													
臺灣													

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